

Order No.: 1862343

Type: SPTAF 1/ 9-5,0-IL

PCB terminal block, Wave soldering, Push-in spring connection



The figure shows a 10-position version of the product

1 Main features



- | | | | |
|---------------------------|---------------------------|------------------------|---------------------|
| • No. of pos. | 9 | • Nominal current | 16 A |
| • Conductor cross section | 1.5 mm ² | • Nominal voltage | 320 V |
| • Color | green (6021) | • Connection direction | 45 ° |
| • Pitch | 5 mm | • Type of packaging | packed in cardboard |
| • Connection method | Push-in spring connection | | |

2 Your advantages

- ✓ Time saving push-in connection, tools not required
- ✓ Defined contact force ensures that contact remains stable over the long term
- ✓ Intuitive use through colour coded actuation lever
- ✓ Small component size for applications where space is at a premium
- ✓ Quick and convenient testing using integrated test option



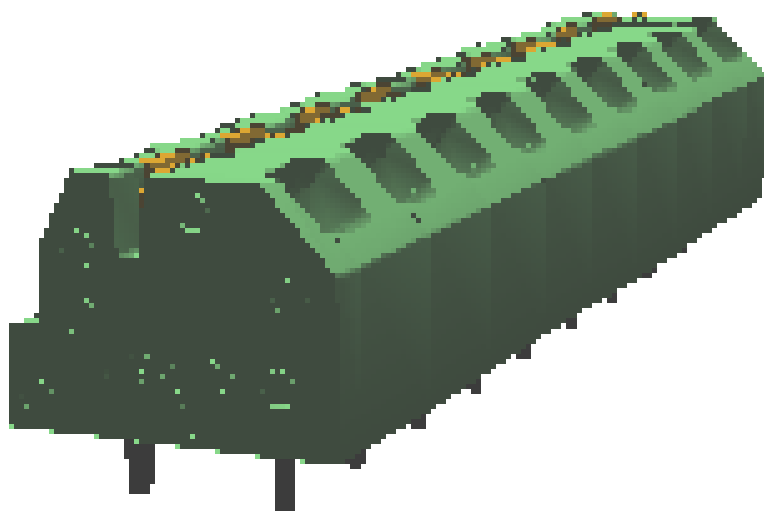
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4 3D model in PDF can be activated (Acrobat Reader only)



1862343 SPTAF 1/ 9-5,0-IL**5 General Technical Data****5.1 item properties**

Order No.	1862343
Type	SPTAF 1/ 9-5,0-IL
Product type	PCB terminal block
Range of articles	SPTAF 1/...-IL
Pitch	5 mm
Range of positions	2...16
Number of positions	9
Number of levels	1
Number of connections	9
Number of potentials	9
Connection method	Push-in spring connection
Mounting type	Wave soldering
Connection direction of the conductor to the PCB	45 °
Pin layout	Linear double pinning
Solder pins per potential	2

5.2 Connection capacity

Conductor cross section, solid	0.2 mm ² ... 1.5 mm ² (When connecting and possibly adjusting a solid conductor of 1.5 mm ² , the mechanical lateral forces, which can affect the terminal block, have to be absorbed by lateral support.)
Conductor cross section, flexible	0.2 mm ² ... 1.5 mm ²
Conductor cross section flexible, with ferrule without plastic sleeve	0.25 mm ² ... 0.75 mm ²
Conductor cross section flexible, with ferrule with plastic sleeve	0.25 mm ² ... 0.75 mm ²
Stripping length	8 mm

5.3 Connection capacity AWG

Conductor cross section AWG	24 ... 16
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6 Material properties**6.1 Material of metal parts**

Note	WEEE/RoHS-compliant, whisker-free acc. to IEC 60068-2-82/JEDEC JESD 201	
Contact material	Cu alloy	
Terminal point surface	Tin (2 - 4 µm Sn)	
Soldering area surface	Tin (2 - 4 µm Sn)	
Surface characteristics	hot-dip tin-plated	

6.2 Material of plastic parts

	Housing	Actuation element
Color	green (6021)	
Insulating material	PA	PBT

1862343 SPTAF 1/ 9-5,0-IL

	Housing	Actuation element
Insulating material group	I	IIIa
CTI according to IEC 60112	600	275
Flammability rating according to UL 94	V0	V0

1862343 SPTAF 1/ 9-5,0-IL**7 Dimensions****7.1 Dimensions for the product**

Length	11 mm
Width	45 mm
Height (without solder pin)	8 mm
Total height	10.6 mm
Solder pin [P]	2.6 mm
Dimension a	40 mm

8 Series drawing

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Technical drawing of a mechanical part, showing a top view (A) and a side view (B). The part is a rectangular plate with a central rectangular cutout and a circular hole. Dimensions are given in millimeters (mm) and inches (in). The drawing includes a table of dimensions and a list of tolerances.

Table 1: Dimensions (mm)

pos.	dim. a	dim. w
2	5.00 ±0.10	10.00 ±0.15
3	10.00 ±0.15	15.00 ±0.15
4	15.00 ±0.15	20.00 ±0.20
5	20.00 ±0.20	25.00 ±0.20
6	25.00 ±0.20	30.00 ±0.20
7	30.00 ±0.20	35.00 ±0.20
8	35.00 ±0.20	40.00 ±0.20
9	40.00 ±0.20	45.00 ±0.20
10	45.00 ±0.20	50.00 ±0.20
11	50.00 ±0.20	55.00 ±0.25
12	55.00 ±0.25	60.00 ±0.25
13	60.00 ±0.25	65.00 ±0.25
14	65.00 ±0.25	70.00 ±0.25
15	70.00 ±0.25	75.00 ±0.25
16	75.00 ±0.25	80.00 ±0.25

Table 2: Tolerances (mm)

pos.	tolerance
2	±0.10
3	±0.15
4	±0.15
5	±0.20
6	±0.20
7	±0.20
8	±0.20
9	±0.20
10	±0.20
11	±0.20
12	±0.25
13	±0.25
14	±0.25
15	±0.25
16	±0.25

Table 3: Tolerances (inches)

pos.	tolerance
2	±0.004
3	±0.006
4	±0.006
5	±0.008
6	±0.008
7	±0.008
8	±0.008
9	±0.008
10	±0.008
11	±0.008
12	±0.010
13	±0.010
14	±0.010
15	±0.010
16	±0.010

Table 4: Tolerances (mm)

pos.	tolerance
2	±0.10
3	±0.15
4	±0.15
5	±0.20
6	±0.20
7	±0.20
8	±0.20
9	±0.20
10	±0.20
11	±0.20
12	±0.25
13	±0.25
14	±0.25
15	±0.25
16	±0.25

Table 5: Tolerances (inches)

pos.	tolerance
2	±0.004
3	±0.006
4	±0.006
5	±0.008
6	±0.008
7	±0.008
8	±0.008
9	±0.008
10	±0.008
11	±0.008
12	±0.010
13	±0.010
14	±0.010
15	±0.010
16	±0.010

Table 6: Tolerances (mm)

pos.	tolerance
2	±0.10
3	±0.15
4	±0.15
5	±0.20
6	±0.20
7	±0.20
8	±0.20
9	±0.20
10	±0.20
11	±0.20
12	±0.25
13	±0.25
14	±0.25
15	±0.25
16	±0.25

Table 7: Tolerances (inches)

pos.	tolerance
2	±0.004
3	±0.006
4	±0.006
5	±0.008
6	±0.008
7	±0.008
8	±0.008
9	±0.008
10	±0.008
11	±0.008
12	±0.010
13	±0.010
14	±0.010
15	±0.010
16	±0.010

Table 8: Tolerances (mm)

pos.	tolerance
2	±0.10
3	±0.15
4	±0.15
5	±0.20
6	±0.20
7	±0.20
8	±0.20
9	±0.20
10	±0.20
11	±0.20
12	±0.25

1862343 SPTAF 1/ 9-5,0-IL**8.1 Dimensions for PCB design**

Hole diameter	1.1 mm
Pin dimensions	0.75 x 0.3 mm
Pin spacing	5 mm

9 Application**9.1 General information**

Note on application	Maximum permissible outer diameter of the wire insulation ≤ 3 mm
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10 Packaging information

Type of packaging	packed in cardboard
Pieces per package	80

10.1 Processing notes

Process	Wave soldering
Specification	Following IEC 61760-1:2006-04
Specification	Following IEC 60068-2-54:2006-04

10.2 Temperature limit values

Ambient temperature (storage/transport)	-40 °C ... 70 °C
Ambient temperature (assembly)	-5 °C ... 100 °C
Ambient temperature (operation)	-40 °C ... 100 °C (dependent on the derating curve)

1862343 SPTAF 1/ 9-5,0-IL**11 Mechanical tests****11.1 Pull-out test**

Specification	IEC 60999-1:1999-11
Result	Test passed
Conductor cross section/conductor type/tractive force actual value	0.2 mm ² / solid / > 10 N
Conductor cross section/conductor type/tractive force actual value	0.25 mm ² / flexible / > 10 N
Conductor cross section/conductor type/tractive force actual value	1.5 mm ² / solid / > 40 N
Conductor cross section/conductor type/tractive force actual value	1.5 mm ² / flexible / > 40 N

11.2 Check for damage to conductor or loosening

Specification	IEC 60999-1:1999-11
Result	Test passed

1862343 SPTAF 1/ 9-5,0-IL**12 Electrical tests****12.1 Electrical data**

Rated current / conductor cross section	16 A / 1.5 mm ²
Rated insulation voltage (III/2)	320 V
Rated surge voltage (III/2)	4 kV
Contact resistance	
Degree of pollution	2

12.2 Air and creepage distances

Component	PCB terminal block		
Specification	IEC 60947-1:2007-06 + A1:2010-12		
Mains type	unearthed mains		
Insulating material group	I		
Comparative tracking index (IEC 60112:2003-01)	CTI 600		
Rated insulation voltage	250 V	320 V	630 V
Rated surge voltage	4 kV	4 kV	4 kV
Degree of pollution	3	2	2
Overvoltage category	III	III	II
Minimum clearance case A (inhomogeneous field)	3 mm	3 mm	3 mm
Minimum value of the creepage path requirement in acc. with table	3.2 mm	1.6 mm	3.2 mm

12.3 Short-time withstand current test

Specification	IEC 60947-7-4:2013-08
Result	Test passed
Conductor cross section/short-time current	1.5 mm ² / 50.4 A

12.4 Aging test (climatic impact and corrosion testing)

Specification	IEC 60947-7-4:2013-08
Result	Test passed
Contact resistance R ₁	0.8 mΩ / 1.5 mm ²
Test sequence 1: low temperature storage	-40 °C / 2 h
Test sequence 2: heat storage	168 h/100°C
Test sequence 3: noxious gas storage (ISO 6988)	KFW 0.2 S/1 cycle
Contact resistance R ₂	0.9 mΩ / 1.5 mm ²
Rated impulse voltage at sea level Voltage waveform ≥ (1.2/50 μs)	4.8 kV
Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz)	2.2 kV

12.5 Mechanical connection test for the PCB terminal block

Specification	IEC 60947-7-4:2013-08
Result	Test passed

1862343 SPTAF 1/ 9-5,0-IL**12.6 Temperature rise test**

Specification	IEC 60947-7-4:2013-08
Result	Test passed
Requirement temperature-rise test	The sum of ambient temperature and temperature rise of the PCB terminal block shall not exceed the upper limiting temperature.
Conductor cross section/test current/temperature rise	1.5 mm ² / 16 A / 33.5 K

1862343 SPTAF 1/ 9-5,0-IL**13 Current carrying capacity/derating curves**

Specification

IEC 60947-7-4:2013-08

Note

Representation based on IEC 60512-5-2:2002-02

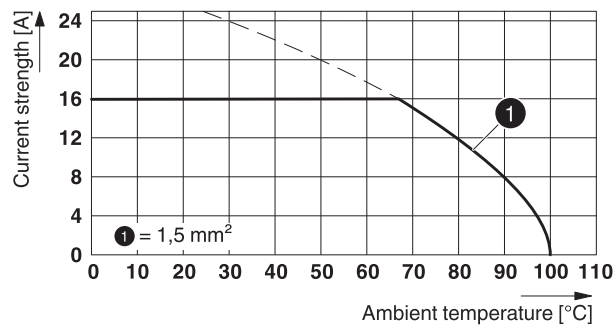
Reduction factor

1

Number of positions

4

Conductor cross section

1.5 mm²**Type: SPTAF 1/...-5,0-IL(EL)**

1862343 SPTAF 1/ 9-5,0-IL**14 Environmental and durability tests****14.1 Vibration test**

Specification	IEC 60068-2-6:2007-12
Result	Test passed
Frequency	10 - 150 - 10 Hz
Sweep speed	1 octave/min
Amplitude	0.35 mm (10 - 60.1 Hz)
Test duration per axis	2.5 h
Test directions	X-, Y- and Z-axis
Note	The connected conductor loops were guided to the test sample at a distance of approx. 10 cm.

14.2 Assessment of fire risk (glow wire test)

Specification	IEC 60695-2-10:2013-04		
Result	Test passed		
Temperature	850 °C		
Time of exposure	5 s		

14.3 Shock protection

Specification	IEC 60529:1989-11 + AMD 1:1999-11 + AMD 2:2013-08
Back of the hand protection (Ball ø 50)	guaranteed
Finger protection (movable test finger)	guaranteed
Note	unenclosed basic insulation - protected against finger contact with IP20 test finger in acc. with IEC 60529 when connected, above the PCB

1862343 SPTAF 1/ 9-5,0-IL**15 Approvals / Certificates**

IECEE CB Scheme 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm ²]
	320 V	16 A	-	0.2 - 1.5
VDE Zeichengenehmigung 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm ²]
	320 V	16 A	-	0.2 - 1.5
cULus Recognized 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm ²]
Usegroup B				
	300 V	8 A	24 - 16	-
Usegroup D				
	300 V	8 A	24 - 16	-
EAC 				

1862343 SPTAF 1/ 9-5,0-IL**16 Commercial Data**

Order No.	1862343
Type	SPTAF 1/ 9-5,0-IL
Pieces per package	80
Net weight	2.853 g
GTIN	4055626137667
	Information that applies locally, see link on page 1
Country of origin	Information that applies locally, see link on page 1

17 Accessories

Description	Order No.	Type
Actuation tool, for ST terminal blocks, also suitable for use as a bladed screwdriver, size: 0.4 x 2.5 x 75 mm, 2-component grip, with non-slip grip	1204504	SZF 0-0,4X2,5
Actuation tool, for ST terminal blocks, also suitable for use as a bladed screwdriver, size: 0.6 x 3.5 x 100 mm, 2-component grip, with non-slip grip	1204517	SZF 1-0,6X3,5